

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

1. (original) A high frequency infrared radiation source comprising:
 - a hermetically sealed chamber with a plasma generating gas therein;
 - a pair of spaced electrodes in the chamber for creating a plasma there between;
 - a window in the chamber; and
 - a collimating lens made of infrared radiation transmissive material disposed between the pair of electrodes and the window.
2. (original) The high frequency infrared radiation source of claim 1 in which the plasma generating gas is xenon.
3. (original) The high frequency infrared radiation source of claim 1 in which the chamber is defined by a TO can including the window and a TO header which supports the pair of spaced electrodes.
4. (original) The high frequency infrared radiation source of claim 1 in which the collimating lens is hemispherical.
5. (original) The high frequency infrared radiation source of claim 1 in which the material of the collimating lens is selected from the group consisting of

sapphire, zinc selenide, germanium, silicon, magnesium fluoride, calcium fluoride, calcium bromide, and cadmium telluride.

6. (original) The high frequency infrared radiation source of claim 1 further including a window element sealed over the window and wherein the collimating lens is disposed behind the window element.

7. (original) The high frequency infrared radiation source of claim 6 in which the window element is made of infrared transmissive material.

8. (original) The high frequency infrared radiation source of claim 6 in which the infrared transmissive material is germanium.

9. (original) The high frequency infrared radiation source of claim 6 in which the window element is coated with an anti reflective material.

10. (original) The high frequency infrared radiation source of claim 6 in which the window element includes metalization and there is a sealing material between the metalization of the window element and the chamber.

11. (original) The high frequency infrared radiation source of claim 10 in which the sealing material is solder or braze.

12. (original) The high frequency infrared radiation source of claim 1 in which the collimating lens is sealed with respect to the window.

13. (original) The high frequency infrared radiation source of claim 12 in which the collimating lens includes metalization and there is a sealing material between the metalization of the lens and chamber.

14. (original) The high frequency infrared radiation source of claim 13 in which the sealing material is solder or braze.

15. (original) The high frequency infrared radiation source of claim 1 in which the pair of spaced electrodes are disposed above a support surface.

16. (original) The high frequency infrared radiation source of claim 15 further including a pair of posts extending upward from the support surface each having terminal ends which contain an electrode.

17. (original) The high frequency infrared radiation source of claim 15 further including a reflector disposed between the support surface and the electrodes.

18. (original) The high frequency infrared radiation source of claim 17 in which the reflector is in the shape of a collimating lens with a flat surface disposed

closest to the electrodes and the remainder of the lens coated with a material which reflects infrared radiation.

19. (original) The high frequency infrared radiation source of claim 15 in which the support surface includes an absorbent coating.

20. (original) The high frequency infrared radiation source of claim 1 in which the electrodes are disposed horizontally across from each other in the chamber.

21. (original) The high frequency infrared radiation source of claim 1 in which the electrodes are disposed vertically with one upper electrode over a lower electrode in the chamber.

22. (original) The high frequency infrared radiation source of claim 21 further including a reflector in the chamber surrounding the upper electrode.

23. (original) The high frequency infrared radiation source of claim 22 in which the reflector includes a gold surface.

24. (original) A high frequency infrared radiation source comprising:
a header;
a pair of spaced electrodes supported above the header;

a can sealed with respect to the header creating a sealed chamber containing the pair of spaced electrodes, the can having a window therein;

a gas in the chamber which creates a plasma between the electrodes;

and

an optical path from the plasma through the window including only materials which transmit infrared radiation.

25. (original) The high frequency infrared radiation source of claim 24 in which the window is an opening in the can.

26. (original) The high frequency infrared radiation source of claim 24 further including an infrared transmissive element sealed over the opening.

27. (original) The high frequency infrared radiation source of claim 24 further including an infrared transmissive collimating lens sealed over the opening.

28. (original) The high frequency infrared radiation source of claim 24 further including both an infrared transmissive element sealed over the opening and an infrared transmissive collimating lens adjacent the transmissive element.

29. (currently amended) The high frequency infrared radiation source of claim 24 in which the ~~plasma-generating gas~~ in the chamber which creates a plasma is xenon.

30. (original) The high frequency infrared radiation source of claim 24 in which the header is a TO header and the can is a TO can.

31. (original) The high frequency infrared radiation source of claim 24 further including a reflector disposed between the header and the electrodes.

32. (original) The high frequency infrared radiation source of claim 31 in which the reflector is in the shape of a collimating lens with a flat surface disposed closest to the electrodes.

33. (original) The high frequency infrared radiation source of claim 32 in which the collimating lens is coated with a material which reflects infrared radiation.

34. (original) The high frequency infrared radiation source of claim 24 in which the header includes an optically absorbent coating thereon.